Watersheds: San Joaquin River, Westside Sub-basin (Orestimba, Del Puerto, Salado, Ingram and Hospital Creeks)

Sampling Period: November 2004 – November 2005

Report Objectives:

1. Collaboration with ongoing monitoring;
2. Spatial and Temporal Trends;
3. Potential Beneficial Use Concerns;
4. Planning for future monitoring program design

KEY STATISTICS

Size of Westside Sub-basin	*670 SqMi*
Number of sites Sampled	*23*
Number of Constituents measured	*11*
Samples Taken	*~4200*
Sample Frequency	*Weekly to Annual*

MESSAGE: Twelve months of water quality monitoring recorded both spatial and temporal trends in a drainage basin to the San Joaquin River.

Site Locations:

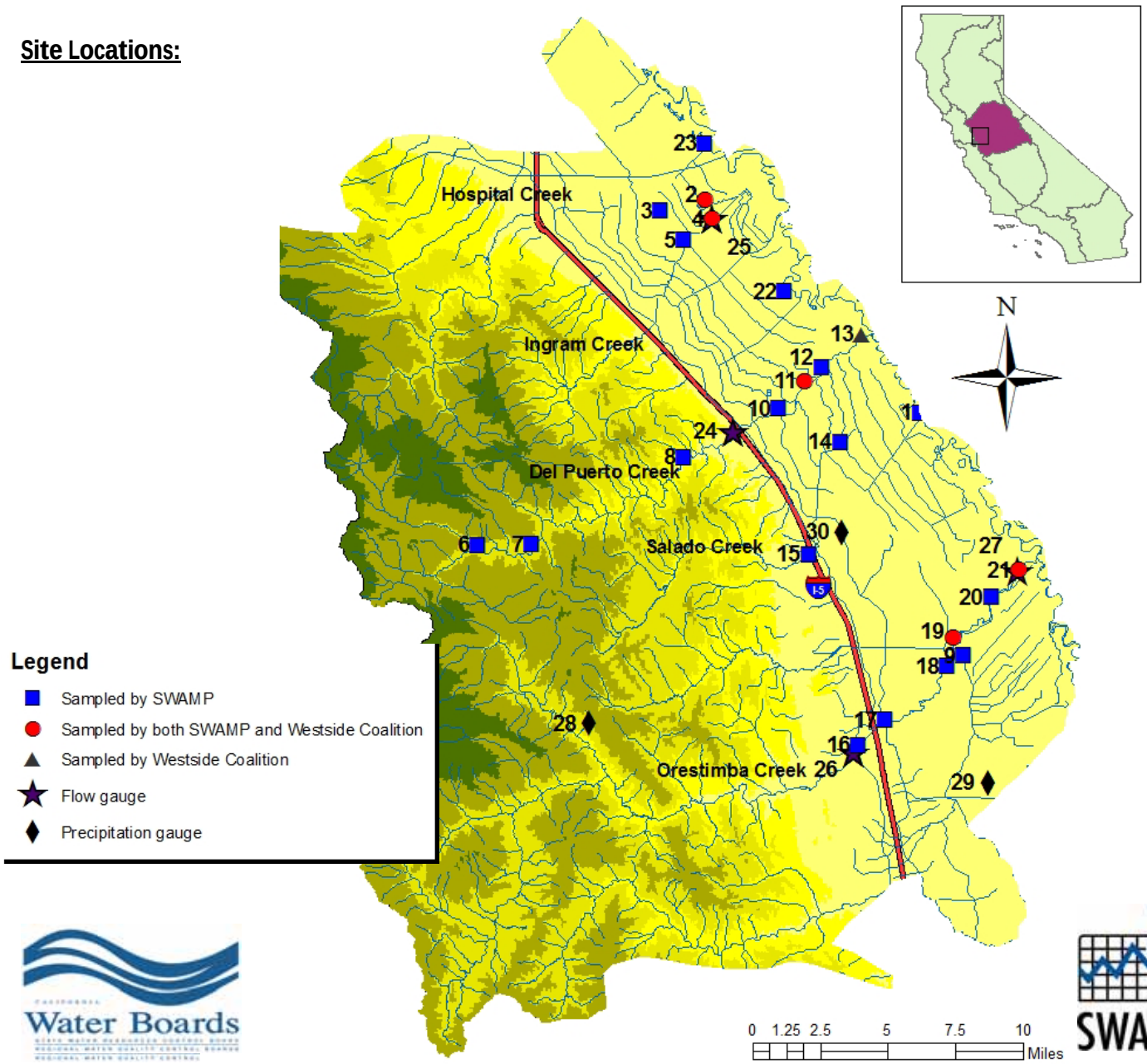

Table 1: Summary of Potential Beneficial Use Concerns: Westside Basin of the San Joaquin River (November 2004 - December 2005)

Beneficial Use/Indicator	Orestimba Creek		Del Puerto Creek		Valley Floor					Source Water	
								Ag Drains			
	Upstream[1]	Downstream[2]	Upstream[3]	Downstream[4]	Salado Creek	Hospital Creek	Ingram Creek	Grayson Drain	Blewitt MWC Drain at Hwy 132	CCID Main Canal @ JT Crow Rd	SJR @ Patterson
Drinking Water											
Specific Conductivity			X		X						
Total Organic Carbon	X	X	X	X	X	X	X	X	X	X	X
E. coli	X	X	X	X	X	X	X	X	X	X	X
Aquatic Life											
pH		X	X	X	X	X			X	X	
Temperature	X	X	X	X	X	X	X	X	X	X	X
Dissolved Oxygen	X	X	X	X	X	X	X	X	X	X	
Water Column Toxicity	NA	X	X	X	X	X		X	X		
Irrigation Water Supply											
Specific Conductivity	X	X	X	X	X	X	X	X	X	X	X
Recreation (Swimming)											
E. coli	X	X	X	X	X	X	X	X	X	X	X

X =One or more result above a goal or objective

NA = No samples were collected in this location

[1] Orestimba @ Orestimba Rd, Orestimba Creek @ Bell Rd, and Orestimba Creek @ Anderson

[2] Orestimba @ Hwy 33, Orestimba @ Kilburn and Orestimba @ River Rd

[3] Del Puerto Creek @ mile 13.6, Del Puerto Creek @ mile 3.9, Del Puerto Creek @ Deer Creek Campground

[4] Del Puerto @ Rogers, Del Puerto @ Hwy 33, Del Puerto @ Vineyard and Del Puerto nr Cox Rd

WHAT IS THE MEASURE SHOWING?

The data gathered over a twelve month period provides information on the spatial and temporal trends in water quality from November 2004 – November 2005 and preliminary indications on the potential beneficial use impacts on the San Joaquin River.

Results show that some constituents displayed distinct spatial and temporal patterns. Spatially Del Puerto and Orestimba Creeks were not similar to each other or to any of the valley floor sites for SC, TSS, TOC, and *E. coli*. In contrast, Del Puerto and Orestimba Creeks were similar to each other and to Salado, Ingram, and Hospital Creeks for pH, DO,and temperature. The overall E. coli concentrations were higher in the valley floor sites, but all sites demonstrated spikes during storm events. Temporally temperature increased at all sites during the summer months, while dissolved oxygen decreased. Specific conductivity, TOC, and TSS were increased during storm events and irrigation periods. Table 1 identifies both indicators utilized and overall evaluation of potential beneficial use concerns.

WHY THIS INFORMATION IS IMPORTANT?

The San Joaquin River Watershed supports multiple beneficial uses (e.g. Drinking Water, Aquatic Life, Irrigation Water Supply and Recreation). Data collected as part of this study provided background water quality information for inflows to the San Joaquin River and was assessed in combination with other available data during the development of the Clean Water Act Sections 305(b) and 303(d) Integrated Report for the Central Valley Region (CVRWQCB, 2009), which assessed overall water quality within the Central Valley of California and also identified impaired waterbodies (water bodies not meeting their beneficial uses designations). The findings within this report can also help determine future program design by focusing resources toward identified concerns.

WHAT FACTORS INFLUENCE THE MEASURE?

Hydrology: Flows within the Westside basin are dominated by agricultural return flows since west side streams are ephemeral and their downstream channels are used to transport agricultural return flows to the main river channel. Poorer quality (higher salinity) water is imported from the Delta for irrigation on the valley floor to replace water lost through diversion of the upper SJR flows.

Land Use: Grazing is the dominant land use in the Orestimba Creek upper watershed with some small orchards just upstream of the valley floor. The main land uses in the upper Del Puerto Creek watershed include cattle grazing, recreation, rural homes and several abandoned mercury and manganese mines. The valley floor sites are dominated by irrigated agriculture.

Water Year Type: A Water Year (WY) begins 1 October and ends 30 September of the following year. The majority of this study period, November 2004 through November 2005, falls within WY2005 with two months continuing into WY2006. The San Joaquin River Index, described in the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (SWRCB, 1995) classified WY2005 and WY2006 as a wet year. Water year 2005 was the first wet year after three dry and one below normal runoff year.

TECHNICAL CONSIDERATIONS:

- Data source: Central Valley Water Board SWAMP website at http://www.swrcb.ca.gov/centralvalley/water_issues/water_quality_studies/surface_water_ambient_monitoring/westsidesites.shtml
- Westside Coalition and ILRP data website at http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/monitoring/monitoring_data/program_participants/index.shtml
- *E. coli* is only an indicator of potential pathogens and does not necessarily identify an immediate health concern.
- Public report and fact sheet are available at: http://www.swrcb.ca.gov/centralvalley/water_issues/water_quality_studies/surface_water_ambient_monitoring/swamp_water_quality_reports/index.shtml#sjrivbasin

REFERENCES:

1. Central Valley Regional Water Quality Control Board (CVRWQCB). 2007. Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins, Fourth Edition, August 2006.
2. Central Valley Regional Water Quality Control Board (CVRWQCB). 2009. The 2008 Update to the 303(d) List and Development of the 2008 303(d)/305(b) Integrated Report. http://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/impaired_waters_list/303d_list.shtml
3. State Water Resources Control Board (SWRCB). 1995. Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary.